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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,266	08/23/2006	Kevin I. Smith	CE12867EP	2070

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EXAMINER
WOO, KUO-KONG

ART UNIT	PAPER NUMBER
4133	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing.US@motorola.com

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claim 10 has been cancelled. Claims 1-9 are now pending.

2.   Claims 3-7 and 9 have been amended (dated August 23, 2006) to eliminate

multiple dependencies, has been enter into record.

Priority

3.   This application claims to foreign priority number 046083.6, filed March 18, 2004.

Drawings

4.   Examiner contends the drawings submitted on 8/23/2006 are acceptable for

examination proceedings.

Claim Rejections - 35 USC § 101

5.   Claims 1-9 are rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention. While the claims recite a series of steps or acts to be

performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another

statutory category (such as a particular apparatus), or (2) transform underlying subject

matter (such as an article or material) to a different state or thing (Reference the May

15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy,

John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"). The instant

claims neither transform underlying subject matter nor positively tie to another statutory

category that accomplishes the claimed method steps, and therefore do not qualify as

a statutory process.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pareto-

based cost simulated annealing for multiobjective optimization to Nam et al in view of

admitted of the instant application (hereinafter admitted prior art) and further view of

Vlach et al. (US Patent Number 5,548,539)

As to claim 1, "A method of selecting operational parameters of a communication

network, characterized by; searching an operational parameter space using a multiple

objective simulated annealing (MOSA) process wherein" Nam discloses (Abstract, a

multiobjective simulated Annealing (MOSA) model is introduced) and (Col 2, lines 13-

18, Suggest four important properties for the multiobjective optimization. 1).Searching

precision. The algorithm must find the possible Pareto optimal solutions, which are

global optima in multiobjective optimization), wherein Pareto optimal solution is an

operation parameter space;

"The objectives are based upon performance indicators of the communication network" wherein Nam discloses using MOSA process but does not explicitly teach performance indicators. Admitted prior art discloses (background in page 3, line 13-18 Communication networks, for example mobile communication networks, require optimizations procedures that help to balance competing performance indicators such as coverage, capacity and quality of service),wherein performance indicators are one of optimization parameters.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Nam teaching combining admitted prior art elements according to know methods to yield predictable results;

"The MOSA process generates an archive of estimated values of a Pareto front" Nam and admitted prior art disclose MOSA process and performance indicators but does not explicitly disclose how to generate the values. Vlach discloses (col. 5, lines 16-18, A template is combined with a set of values from block 26 to become what is referred to herein as a "component model", which is a template having a specific set of values assigned thereto) and (Col 3.line 9-12, object of the invention is to provide an analysis mechanism which determines system design values such that specified measures of system and device performance are optimized), wherein template model store(archive) data to achieve optimal value(estimated values of a Pareto front) of the system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Nam and admitted prior art teaching using of known technique to improve similar device in the same way;

"The MOSA process employs a dominance-based energy function" Nam and admitted prior art disclose MOSA process and performance indicators but do not disclose dominance –based energy. Vlach discloses (col. 32, lines 18-21, the device must always operate within the boundaries of the curve. The individual segments of the curve correspond to different stress limits: maximum Ic 162, maximum power dissipation 164, secondary breakdown limit 166, and maximum Vce), wherein maximum power is dominated energy function for the process.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Nam and admitted prior art teaching applying a known technique to a known device ready for improvement to yield predictable results.

As to claim 2," A method according to claim 1, wherein the dominance-based energy function(x), is defined substantially as $E(x) = .mu. ([tilde over (F)].sub.x)$, where .mu. is a measure defined on [tilde over (F)].sub.x, and [tilde over (F)].sub.x is defined substantially as [tilde over (F)].sub.x=[y.epsilon.[tilde over (F)]|yx], such that [tilde over (F)].sub.x is the set of elements of [tilde over (F)] that dominate solution x, where [tilde over (F)] is the union of the current set of mutually non-dominating solutions found, with the current solution x and the proposed perturbed solution x' "

Nam disclose (Col. 3,lines 23-36, Multiobjective Optimization the

Definition 1. *Pareto optimality*
Consider, without loss of generality, the minimization of
the n components $f_k, k = 1, \cdots, n$, of a vector function f of
a vector variable x in a universe A, where

$$f(x) = (f_1(x), \cdots, f_n(x)).$$

Then a decision vector $x_u \in A$ is said to be Pareto
optimal if and only if there is no x_v for which

$$v = f(x_v) = (v_1, \cdots, v_n)$$ dominates

$$u = f(x_u) = (u_1, \cdots, u_n),$$ that is, there is no $x_v \in A$ such
that

$$v_i \leq u_i \quad \forall i \in \{1, \cdots, n\} \text{ and } v_i < u_i \quad \exists i \in \{1, \cdots, n\} \quad \square$$

The set of all Pareto-optimal decision vectors is called the Pareto optimal set), wherein

simple substitution of F(X) for E(x) to yield predictable results.

   As to claim 3," A method according to claim 1, wherein the difference in the

dominance-based energy function between current solution x and proposed

perturbed solution x' is evaluated substantially as .delta. .times. E .function. (x , x ')

= 1 F ~ .times. (F ~ x - F ~ x '), all terms as defined herein" Nam disclose MOSA

process and dominate-based energy function but does not explicitly teach the

difference in dominance-based energy, Vlach discloses (Col. 7, lines 50-64,

$$M_{jMAX} = M_{jNOM} + \sigma_{M_jMAX}$$

$$M_{jMIN} = M_{jNOM} - \sigma_{M_jMIN}$$

where

$$\sigma_{M_jMAX} = \sqrt{\sum_{i=1}^{N} \left(\frac{\partial M_j}{\partial P_i} P_{iMAX} \right)^2}$$

$$\sigma_{M_jMIN} = \sqrt{\sum_{i=1}^{N} \left(\frac{\partial M_j}{\partial P_i} P_{iMIN} \right)^2}$$

Wherein GM jmax is mean square of absolute values of Fx of P. The different of Fx-Fx' is divided 1/|f| is same expression as above function as defined here.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Nam elements in invention of Vlach teaching according to known method to yield predictable results.

As to claim 4, "A method according to claim 1, wherein additional values of the estimated Pareto front are obtained by randomly sampling an attainment surface of the archive of estimated values of the Pareto front. The claim 4 is rejected as same reason as claim1, wherein template model store data to achieve optimal value (Pareto front) of the system.

As to claim 5, "A method according to claim 1, wherein the MOSA process may propose a perturbation to the present solution x that is scaled using one of two scaling Schemes; I. transversal scaling ii. Location scaling" Nam disclose MOSA process and dominate-based energy function but does not explicitly teach scaling. Vlach discloses (Col. 6, lines 21-33, Extreme Value Analysis (EVA), the decision algorithms for EVA-WCA operates in the feed-back mode. Sensitivity (as discussed above) is performed

for each performance measure and system parameter of interest. The sensitivity

information is used by the decision algorithm to determine the direction to change the

system parameters in order to achieve the Worst Case performance. The decision

algorithm changes these parameters to their extreme values (as determined by their

parameter variation distributions) and repeats the sensitivity analyses at the new

parameter set. If the direction of sensitivity has not changed from the original, then the

correct "Worst Case" set of parameters is assumed to have been found),and (Col. 4,

lines 13-15,. FIG. 18 is combined power rating curve and derating curve for a precision

metal foil resistor, as used by the stress analysis mechanism),wherein based on Fig.8,

transversal scaling measure is used to the present solution X.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine Nam elements in invention of Vlach teaching

according to known method to yield predictable results.

As to claim 6, "A method according to claim 1, wherein objectives may be based

upon performance indicators of the communication network from any or all of the

following categories; I. Capacity; ii. Coverage; and iii. Quality of service" Nam

disclose MOSA process but does not explicitly teach the indicators categories,

Admitted prior art discloses (page 2, line 27-31, In order to determine an optimum

balance between several objectives such as coverage, capacity and quality of service,

a single, compound objective metric function must be derived for use in both the

optimization process described above), wherein applicant admitted in the background

as optimization procedure to help balance competing performance indicator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine prior art elements in invention of Vlach teaching according to known method to yield predictable results

As to claim 7, "A method according to claim 1, wherein cost values are applied the objectives and/or the operational parameters according to a given scenario" Nam discloses (Col. 4, lines 50-55, Pareto-based cost, a new multiobjective optimization method that satisfies the detailed balanced condition of the SA. Instead using the cost functions directly, we used the Pareto-based cost stimulated annealing (PCSA), wherein cost is essential part of decision process.

As to claim 8, "A method according to claim 7, wherein the solution with the lowest cost within the archive of estimated values of the Pareto front is chosen for a given scenario" The claim 8 is rejected as same reason as claim 4 and 7, wherein the solution within the lowest cost of collected values of the Pareto front is chosen.

As to claim 9, "A method according to claim 1, wherein the operational parameter values associated with a chosen solution are incorporated within the communication Network" Nam discloses MOSA process but does not explicitly teach to be use in communication network. Admitted prior art discloses (page 1, line 13-27, Communication networks, for example mobile communication networks, require optimizations procedures that help to balance competing performance indicators), wherein a chosen solution are incorporated within the communication Network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Nam's teaching in invention of admitted prior

art applying a known technique to a known device ready for improvement to yield

predictable results.

Conclusion

7.   The prior are made of record and not relied upon is considered pertinent to

applicant's disclosures.

- U. S. Patent Number 7,398,257 B2 to Kaji discloses a similar invention as
  recited in claim1.

- U. S. Patent Number 5,842,224 to Fenner discloses a similar invention as
  recited in claim 1.

- U. S. Patent Number 6,055,235 to Blanc et al. discloses a similar invention
  as recited in claim 1.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to KUO WOO whose telephone number is

(571)270-7266. The examiner can normally be reached on Monday through

Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Abul Azad can be reached on 571-272-7599. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-

8300.

Information regarding the status of an application may be obtained from the

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Status information for unpublished applications is available through Private PAIR

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Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

/KUO WOO/   /ABUL AZAD/
Examiner, Art Unit 4133   Supervisory Patent Examiner, Art
                                                       Unit 4133